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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,386	01/04/2005	Tatsuo Tsubaki	1156-009	4710
25215 DOBRUSIN & THIENNISCH PC 29 W LAWRENCE ST SUITE 210 PONTIAC, MI 48342	7590 07/01/2008		<div>EXAMINER</div> <div>THEISEN, MARY LYNN F</div> <div>ART UNITPAPER NUMBER</div> <div>1791</div> <div>MAIL DATEDELIVERY MODE</div> <div>07/01/2008PAPER</div>	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/516,386

**Applicant(s)**

TSUBAKI ET AL.

**Examiner**

Mary Lynn F. Theisen

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-892)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_
- Paper No(s)/Mail Date 6/17/08 3/21/08 8/17/06 1/04/05



**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 18, 21-23 and 25-31 are rejected under 35 U.S.C. 102(a) as being anticipated by van der Geest (US 6,403,002).

3. The reference discloses forming a three dimensional model in layers by applying a first material on a build bed, selectively applying a second material to the first material, curing and repeating the steps. The first material is a powder of binder and filler. The filler may be sand. See column 2, lines 42-53. The second material is water with flow promoter (carrier). See column 2, lines 25-42.

4. Claims 18, 21,22 and 24-33 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 01/34371.

5. The reference discloses forming a three dimensional model in layers by applying a first material on a build bed, selectively applying a second material to the first material, curing and repeating the steps. The first material is a particulate with a reactive coating.

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See page 11, lines 19+. The second material is a liquid with a carrier. See page 9, lines 21-27. The first and second materials react, see page 7, lines 13-20. The particulate can be polymers including polyamide and polystyrene or silicon dioxide (sand). See page 20, line 22-32. The coating can be a phenolic precursor. See page 12, line 3. Furan is a phenolic precursor.

6. Claims 18, 21-23, 25-29 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Patel et al (US 2004/0036200).
7. The reference discloses forming a three dimensional model in layers by applying a first material on a build bed, selectively applying a second material to the first material, curing and repeating the steps. The first and second material are reactive. See [0008]. The first material is a powder that includes a reactive polymer and filler, which can be silica (sand). See [0030] and [0031]. The second material is a liquid that includes a diluent (carrier). See [0026].

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over van der Geest or Patel.

11. Both references are described above. It would have been obvious to one of ordinary skill in the art to prepare the first material either continually or in batch because this is a well known procedure in the art when preparing materials for use.

12. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over van der Geest or Patel in view of Ederer et al (7,004,222) or Williams (Feasibility Study of Investment Casting Pattern Design By Means of Three Dimensional Printing).

13. It would have been obvious to one of ordinary skill in the art to use the model formed by the processes of van der Geest or Patel as a mold or model for metal casting as Ederer et al (column 4, line 1) and Williams indicate that articles made by such processes can be used as such.

***Claim Rejections - 35 USC § 112***

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

16. It is not clear what materials are included in "another polymeric powder". There are thousands. As the claim now reads any polymer powder would meet the requirement.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Lynn F. Theisen whose telephone number is 571-272-1210. The examiner can normally be reached on Thursday and Friday 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mary Lynn F. Theisen/  
Primary Examiner, Art Unit 1791